

## A BACKUP POWER SYSTEM

### ABSTRACT

A backup power system is connected in parallel to a load which is powered via a power line connecting that load to a main power source, such as a utility. The backup system includes a generator/condenser unit that is coupled to a flywheel unit to maintain the flywheel of that flywheel unit rotating at a preset speed during normal power system operation and is also connected to a thermal engine to supply power to the load via the generator/condenser unit when there is an interruption of power from the main power source. A shaft coupling unit slidably couples the generator/condenser unit to the flywheel unit. The shaft coupling unit includes a slip plate. Part of the shaft coupling unit rotates in accordance with the operation of the generator/condenser unit, while with the slip plate rotates in accordance with the flywheel of the flywheel unit. Rotation of the generator/condenser unit is monitored by a sensor and rotation of the flywheel is also monitored. A circuit generates a signal which activates the thermal engine when rotational speed of the generator/condenser unit differs from rotational speed of the flywheel by a preset margin.